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SCIENCE

FRIDAY, DECEMBER 24, 1909

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MSS. intended for publication and books, etc., intended for review should be sent to the Editor of SCIENCE, Garrison-on-Hudson, N. Y.

UNIVERSITY REGISTRATION STATISTICS

THE registration returns for November 1, 1909, of twenty-eight of the leading universities of the country will be found tabulated on page 898. Three institutions have been added to the list this year, namely, Texas, Tulane and Washington (St. Louis). The introductory comments made last year on the relative value of the figures presented in the table[1] should be borne in mind in studying the statistics herewith submitted. May I point out once again, however, that I do not wish the reader to infer that in my opinion size is the primary consideration in examining an institution of learning; on the contrary, I am thoroughly convinced that there is as much fault to be found with an overgrown department, school or university as there is with an overgrown city or potato. We are concerned in the present instance, however, with values expressed merely in student units and not in terms of productive efficiency.

This year four institutions—Iowa, Minnesota, New York University and Yale—show a loss in enrollment compared with the previous year, as against two in 1908 and five in 1907. On the whole, considerable gains have been made all along the line, the increase in several instances being quite marked. The greatest gains in terms of student units, including the summer session attendance, have been made during the year by Columbia, Chicago, Wisconsin, California, Cornell, Ohio and Pennsylvania, in the order named, each one of

[1] SCIENCE, N. S., Vol. XXVIII., December 25, 1908, p. 911.

Faculties November 1, 1909	California	Chicago	Columbia	Cornell	Harvard (incl. Radcliffe)	Illinois	Indiana	Iowa	Johns Hopkins	Kansas	Michigan	Minnesota	Missouri	Nebraska	New York	Northwestern	Ohio State	Pennsylvania	Princeton	Stanford	Syracuse	Texas	Tulane	Virginia	Washington	Western Reserve	Wisconsin	Yale	
College Arts, Men	533	794	632	} 950	2256	400	503	521	158	526	1116	613	491	482	340	390	375	368	894	540	} 1310	497	91	328	79	321	744	1238	
College Arts, Women	995	670	513		464	465	428	522		530	654	953	459	472	158	557	359			456		476	181		139	297	873		
Scientific Schools*	802		666	1727	96	1087		201		432	1291	590	548	523	210	58	857	807	370	475	400	230	145	105	162		783	968	
Law	112	199	318	256	760	168	131	235	378	204	760	376	249	170	768	261	180	344		42	189	314	64	256	94	139	149	348	
Medicine	60	146	307	178	312	512	244	218	174	83	354	176	170	110	472	571		542		7	139	206	423	86	190	92	48	125	
Non-Professional Grad. Schools	337	441	797	256	423	230	111	121		70	151	93	122	97	264	82	76	389	134	81	55		24	28	24	24	259	413	
Agriculture	171			509		551						681	275	390			284										310		
Architecture	†		128	140		240					†						36	191			62		13		19				
Art	116					1		†		39				61							124		79		184			49	
Commerce	213				73	133		†			†				868	300		487									238		
Dentistry	57				86	107		155			212	196				308		434					89		93	87			
Divinity		174			48											216												109	
Forestry	†				†	†					†	98		38			28											83	
Journalism						13					†		65																
Music	†		25			55		37		124		†		475		382		29			758		39				108	75	
Pedagogy	†	184	974			†		†			†	69	220	316	441		48	544			80	280	27						
Pharmacy	78		290			173		53		70	93	81		15		217	75						61	8		71	37		
Veterinary Medicine				98											12		202	168											
Other Courses		394		405		38		55				110				130	137	325			103	29	17		19	63	48		
Deduct Double Registration	*20*	*198*		*5*				*94*		*156*			*333*	*28*	*109*	*313*	*13*	*20*			*82*	*298*	*74*	*36*		*11*	*102*	*144*	
Total	3454	2804	4650	4514	4518	4173	1417	2024	710	1922	4631	4036	2226	3121	3424	3129	2644	4608	1398	1601	3138	1795	1156	767	1003	1083	3495	3264	
Summer Session 1909	819	2253	1968	889	1377	631	1139	361		368	1225	452	552	402	563	244	642	449		50	203	848	782				1153	12	
Deduct Double Registration	*139*	*570*	*486*	*375*	*337*	*302*	*325*	*139*		*146*	*597*	*137*	*189*	*121*	*144*	*176*	*274*	*200*		*43*	*93*	*141*	*56*				*383*		
Grand Total 1909	4084	5487	6132	5028	5558	4502	2231	2246	710	2144	5259	4351	2589	3402	3843	3197	3012	4857	1498	1620	3248	2492	1882	767	1003	1083	4245	3276	
" " 1908	3751	5114	5675	4700	5342	4400	2113	2356	698	2086	5188	4607	2558	3154	3951	3113	2700	4555	1514	1541	3204	1446	1171	757		1016	3876	3466	
" " 1907	3316	4594	5197	4293	5346	4172	1667	2188	651	1932	4953	4207	2274	2812	3648	2714	2344	4134	1311	1594	3162	1474	1219	757		914	3401	3435	
" " 1906	3246	4731	4650	4075	5343	3810	1515	1950	618	1690	4674	3944	2071	2807	3283	2635	2180	3934	1352	1530	3004	1351	1285	745		905	3099	3477	
" " 1905	3631	4557	4755	3871	5283	3635	1377	1700	688	1706	4521	3940	1887	2635	2912	2791	2057	3430	1361	1606	2776	1190	828	696		856	3083	3477	
" " 1904	3758	4035	4833	3833	5392	3369	1206	1460	740	1446	4000	3886	1704	2728	2380	2856	1758	3027	1385	1424	2452	930	1124	691		808	3370	3008	
" " 1903	3690	4146	4557	3438	6013	3239	1614	1260	694	1319	3926	3550	1540	2513	2177	2740	1710	2644	1434	1370	2207	785	1037	638		765	3221	2990	
Extension and Similar Courses	700	‡	2250		920					67	257		140	95	350	525	31						142	40		49	62	3162	
Officers	322	350	687	585	612	545	100	160	214	137	466	239	189	259	295	351	224	483	185	150	240	129	204	96	142	231	439	401	

* Includes schools of mines, engineering, chemistry and related subjects

† Included elsewhere. ‡ No figures furnished

NOTE.—The Texas and Tulane figures for 1903–1908 are exclusive of the summer session

these having gained over three hundred students. Columbia was the only institution to register an increase of over four hundred students this year, whereas there were no less than eight last year. Omitting the summer session, the largest gains have been made by Pennsylvania, Cornell, Wisconsin, California, Ohio and Nebraska, in the order given, the growth in each case being one of two hundred students or more. Comparing this year's grand totals with those of 1902, we find that the largest gains during this period have been made by Pennsylvania, Columbia, Cornell, Illinois, New York University, Michigan, Ohio, Wisconsin, Syracuse, Chicago and Missouri, each of these universities showing an increase of over one thousand students. It will be observed that these institutions are fairly evenly divided between the east and the west, but that the first three are all eastern institutions, although it is ordinarily supposed that, speaking broadly, the western institutions have been growing much more rapidly than the eastern institutions during the past decade and at the expense of the latter.

According to the figures for 1908, the twenty-five universities included in the table ranked as follows: Columbia, Harvard, Michigan, Chicago, Cornell, Minnesota, Pennsylvania, Illinois, New York University, Wisconsin, California, Yale, Syracuse, Nebraska, Northwestern, Ohio, Missouri, Iowa, Indiana, Kansas, Stanford, Princeton, Western Reserve, Virginia, Johns Hopkins. Comparing this with the order for 1909, we observe that Chicago and Michigan have changed places, that Pennsylvania and Illinois have passed Minnesota, that Wisconsin and California have passed New York University and that Yale and Syracuse have been passed by Nebraska. For the second time in the history of American higher institutions of learning the six thousand mark has been exceeded, Columbia having a total enrollment this year of 6,132, Harvard having registered 6,013 students in 1903. Cornell is the fifth institution to pass the five thousand mark, its total registration this year being 5,028; Harvard passed it a number of years ago, Columbia in 1907 and Chicago and Michigan last year. Omitting the summer session enrollment, the order is naturally somewhat different, namely, Columbia, Michigan, Pennsylvania, Harvard, Cornell, Illinois, Minnesota, Wisconsin, California, New York University, Yale, Syracuse, Northwestern, Nebraska, Chicago, Ohio, Missouri, Iowa, Kansas, Texas, Stanford, Indiana, Princeton, Tulane, Western Reserve, Washington, Virginia, Johns Hopkins—the order being quite different from that of last year, most notable being the change of position between Columbia and Michigan and the passing by Pennsylvania of Minnesota, Harvard and Cornell; Illinois has also passed Minnesota, while Wisconsin and California have passed New York University.

Considering the various faculties in order, we find that, with a few exceptions, notably Northwestern and Wisconsin, there have been gains all along the line in the attendance on the male undergraduate academic departments, the most important increases being shown by Princeton, Nebraska, Stanford and Kansas. The gain in the case of Princeton, however, is evidently due in great measure to a readjustment of terminology. The enrollment of undergraduate women also shows a satisfactory general increase, the gain being most marked in the case of California, Wisconsin, Radcliffe and Northwestern. At California, Illinois, Iowa, Kansas, Minnesota, Northwestern, Tulane, Washington and Wisconsin, and probably at Cornell

and Syracuse, the number of the undergraduate women is larger than that of the men. Harvard continues to lead in the number of male academic students, being followed by Yale, Princeton, Michigan, Chicago, Wisconsin, Columbia and Minnesota; including the women, the order would be Harvard, Michigan, Wisconsin, Minnesota, California, Chicago, Syracuse, Yale, Columbia, Kansas and Iowa, each of these institutions enrolling over one thousand academic students.

A general depression is noticeable in the case of the engineering schools, Stanford being the only institution to exhibit a noteworthy gain, the increase in the case of Illinois, Syracuse, Virginia and Yale being insignificant, Cornell remaining stationary, and every one of the other institutions showing a loss, which in the case of several is quite marked. At Columbia there has been a gain of ten per cent. in new students, which, however, was not large enough to offset the loss of old students occasioned primarily by increased standards for advancement. Cornell continues to maintain its lead in the number of scientific students, Michigan and Illinois being the only other institutions to attract over one thousand students to their schools of engineering; these are followed by Yale, Ohio, Pennsylvania, California, Wisconsin, Columbia, Minnesota, Missouri and Nebraska, each of these universities attracting over five hundred students to their scientific schools.

Thirteen of the medical schools and ten of the law schools exhibit a loss as against last year, while nine of the medical schools and twelve of the law schools have experienced an increase in attendance, there being a total loss of 185 students in medicine and of 79 students in law since last year at the institutions included in both this and last year's tables. The largest gains in medicine have been registered by New York University and Northwestern, in law by Harvard, Ohio and Michigan; the largest losses in the former have been experienced by Michigan and Iowa, in the latter by Minnesota and Yale. The eastern institutions show a loss of three students in medicine and of eight students in law, whereas the western institutions lost 182 in medicine and 71 in law. New York University still attracts the largest number of law students, being followed by Harvard and Michigan, Minnesota, Yale, Pennsylvania, Columbia and Texas, each of these having an enrollment of over three hundred students. In medicine Northwestern has passed Pennsylvania, these being followed by Illinois, New York University, Tulane, Johns Hopkins, Michigan, Harvard and Columbia, all of these institutions enrolling more than three hundred students.

The graduate schools experienced an increase of 393 students, Harvard being the only institution on the list to show a loss of any moment, the largest gains having been made by Northwestern, Indiana and Columbia. The last named institution, with an enrollment of 991 students (to the 797 in the table should be added 194 graduate students at Teachers College, who are omitted here for the sake of avoiding the item of double registration), has by far the largest graduate school, being followed by Chicago, Harvard, Yale, Pennsylvania, California, New York University, Wisconsin, Cornell and Illinois, each of these institutions enrolling over two hundred non-professional graduate students. It will be observed that six of these institutions are in the east and four in the west.

All of the schools of agriculture show a most encouraging increase, the single exception being Minnesota, where the apparent decrease of 348 is undoubtedly due to the fact that the students enrolled in the

short course were included last year but omitted this year. In spite of this fact, Minnesota remains at the head of the list so far as attendance is concerned, being followed by Illinois and Cornell, as last year.—Illinois, Pennsylvania and Cornell exhibit gains in architectural students, in the order named, while Columbia and Syracuse have remained stationary. The four largest schools are those of Illinois, Pennsylvania, Cornell and Columbia.—Northwestern, California, Pennsylvania and Harvard have registered an increase in their schools of commerce, Illinois and New York University showing a very slight loss. The last named institution and Pennsylvania maintain the largest schools.—The dental schools, which last year for the most part suffered a loss, have made encouraging advances, Iowa being the sole exception, and the decrease in her case is slight. Northwestern and Pennsylvania registered the largest gains. From the standpoint of attendance on the dental schools the universities rank in the order Pennsylvania, Northwestern, Michigan, Minnesota.—Only four of the institutions on the list, that is, only one seventh, support divinity schools, the eastern universities, Harvard and Yale, showing a gain, the western universities, Chicago and Northwestern, a loss. The latter institution has the largest attendance on this particular faculty.—The forestry students are in several instances not listed separately; wherever they are, an increase is apparent, except at Ohio, the loss there being a small one.—Nebraska, Northwestern and Syracuse attract the largest number of students of music, and are the only institutions that registered an increase in this department, Columbia's attendance having remained stationary.—Missouri, New York University and Syracuse have fewer students of pedagogy than they had last year, the Teachers College of Columbia University leading in enrollment, with Pennsylvania, New York University, Nebraska, Texas and Missouri following in the order given. The 544 students mentioned under pedagogy at the University of Pennsylvania are enrolled in courses for teachers.—Northwestern, California, Columbia and Nebraska have made gains in pharmacy, Wisconsin has remained stationary and all of the other institutions show losses in this field. Columbia continues to maintain the largest school of pharmacy and Northwestern has passed Illinois.—Ohio, Pennsylvania and Cornell attract the largest number of students of veterinary medicine and all three have made slight gains, New York University having remained to all intents and purposes stationary.

Two thirds of the institutions experienced an increase in their summer session enrollment, the most significant gains having been secured by Columbia and Chicago. The latter attracted over three thousand students to its summer quarter, Columbia drew almost two thousand to its summer session, and Harvard, Michigan, Indiana and Wisconsin all had over one thousand students. The Columbia figures are exclusive of students registered at Camp Columbia, Morris, Conn., for summer work in surveying or geodesy. In connection with the summer session it must be borne in mind that all of the summer students are not of college grade, but no detailed figures on this point are available.

The New England colleges for women have fared better than those for men and those for both sexes, Smith, Wellesley and Mt. Holyoke all showing gains over last year, whereas Dartmouth, Brown, the University of Maine, Amherst, Tufts (college only) and Bowdoin show losses, the Massachusetts Institute of Technology, Wesleyan and Williams having registered an increase

over last year. Vassar and Bryn Mawr, Lehigh and Lafayette and Oberlin (college only) also exhibit a gain in attendance, while Purdue and Haverford show a slight loss. All of the institutions just mentioned, with the exception of Brown, Bryn Mawr and the Massachusetts Institute of Technology, show an increase as compared with five years ago, the figures in detail being as follows:

Institution	1909	1908	1904
Amherst	526	528	412
Bowdoin	419	420	363
Brown	974	993	988
Bryn Mawr	412	393	441
Dartmouth	1,197	1,133	926
Haverford	157	160	146
Lafayette	468	455	422
Lehigh	667	662	609
Massachusetts Inst. of Tech.	1,480	1,462	1,561
Mount Holyoke	752	748	674
Oberlin (college only)	953	855	652
Purdue	1,682	1,717	1,359
Smith	1,609	1,566	1,067
Tufts (college only)	428	434	375
University of Maine	850	884	563
Vassar	1,039	1,014	979
Wellesley	1,319	1,282	1,050
Wesleyan	343	322	305
Williams	528	487	443

The falling off in the number of undergraduates at Brown may be attributed to increased entrance requirements demanded of candidates for engineering degrees. Of the 1,197 students enrolled at Darmouth, 1,112 are in the college, 57 in the medical school, 50 in the Thayer school and 35 in the Tuck school. At Oberlin the total registration, including in addition to the college the theological seminary, the conservatory of music, the academy and the students in drawing and painting, is 1,798, as against 1,748 in 1908 and 1,505 in 1904. The Purdue figures represent the total registration in the four classes in the schools of agriculture, chemical engineering, civil engineering, electrical engineering, mechanical engineering and science, the two classes in the school of pharmacy, together with special and graduate students in the university as a whole; no entry is made for the agricultural winter course, since this does not open until January. At Tufts the medical and dental schools show an attendance of 717, a gain of 36 over last year and of 108 over 1904, the total attendance for the three years in question being 1,145, 1,115 and 1,004, respectively. The slight decrease in enrollment at the University of Maine is probably due to increased standards of admission and to the increase in tuition for students who come from outside the state of Maine. At Vassar an effort is made to keep the total number down to approximately a thousand. The excess this year is owing to the fact that an unusually large number of former students returned in September, while the falling off among the new students was smaller than usual during the summer. At Wesleyan the chief gain has been experienced in the freshman class, which is the largest in the history of the college. There has been a total gain of 21 students, in spite of the fact that a considerable number of the women students left this year by reason of the recent action of the trustees abolishing coeducation; there are at present only 19 women students enrolled.

Taking up the various institutions in alphabetical order, we find that the *University of California* shows gains in every department with the exception of engineering, the most substantial increase being found in the number of undergraduate women, namely, one of 116 students. Of the 337 students in the graduate school about 160 are women, most of whom are candidates for the teacher's recommendation. The graduate school also includes 14 candidates for the degree of *juris doctor*, which is conferred two years after the A.B. or the LL.B.

The *University of Chicago* shows a substantial gain in its grand total, the chief increase having taken place in the summer quarter. In the present quarter the largest gains have been made in the courses given for teachers, listed under "other courses," and in the male college department. The graduate school also shows a healthy gain, while divinity, law and medicine experienced slight losses, pedagogy having remained stationary and the registration under "college of arts, women," having fallen off from 685 to 670.

Columbia University shows a large increase in its grand total and a gain of 110 students in its fall enrollment, gains in the number of academic undergraduates, in the graduate schools and at Teachers College more than offsetting slight losses elsewhere. The attendance on the schools of law and medicine has remained stationary. The summer session experienced the encouraging increase of 436 students.

Cornell University shows a healthy increase both in the fall enrollment and the summer session, the increase in the grand total being one of 328 students. The medical school alone shows a loss in attendance, the scientific schools having remained stationary. Of the 1,727 students in the latter department, 1,167 are registered in mechanical and 560 in civil engineering. Of the medical students 160 are in New York and 18 in Ithaca. The students listed under "other courses" are enrolled in the short winter course in agriculture, there being a total gain of 162 students in this and the regular agricultural course.

Harvard University also experienced an increase in its summer as well as its fall registration, the only losses in attendance occurring in the scientific schools, the graduate school and the medical school. Of the 96 scientific students, 83 are registered in the graduate school of applied science and the remainder in the Lawrence scientific school. The Lowell Institute, in cooperation with Harvard University, offers free courses of lectures corresponding closely in subject matter, methods of instruction, examinations and scale of marking, with those given in Harvard College. These courses, when accepted by the appropriate departments of the faculty of arts and sciences, may be counted towards a degree by men who afterwards secure admission to Harvard College. Nine hundred and twenty persons are now registered in these courses. About five of this number are now registered in Harvard University. The opportunities offered by these courses of lectures now make it unnecessary for the university to maintain the afternoon and Saturday courses for teachers, which it has been accustomed to offer in the last two years.

The *University of Illinois* gained 121 students this fall, but lost 25 in the summer. The chief increase this fall is to be found in the schools of agriculture and architecture and in the number of undergraduate women. Losses have been experienced in music and pharmacy, the other faculties having remained practically stationary. The marked increase in the number of agricultural students is said to be the natural result of the growing appreciation of the value of scientific knowledge on the part of the farmers. It is difficult to predict whether the increase in architecture is sporadic or likely to be permanent. The losses in music and in pharmacy are due to increased requirements.

Indiana University registered an increase of 134 in its summer session and one of 50 in the fall enrollment, losses in medical and male college students being more than offset by gains in the other faculties, an increase of 71 students in the graduate school being especially noteworthy. The

last mentioned gain, however, is in all probability due to a change in classification and does not represent an actual growth of that size in graduate students.

The *State University of Iowa,* which last year exhibited an increase in every department but dentistry, has lost 98 students this fall, the summer session having remained stationary. The chief losses have been experienced in medicine, music and engineering. The 55 students listed under "other courses" are registered in the nurses' training school. The most noticeable change in enrollment is the loss in numbers in the college of medicine. This is due to an advance in the requirement for admission from the completion of four years of high school work to the completion of one year of college work. In 1910 the requirement for admission to the college of medicine will be two years of college work. The requirement for admission to the college of dentistry was advanced from the completion of three years of high school work to the completion of four years of high school work. The loss on this account, however, was slight.

Johns Hopkins University has gained 12 students since last year, an increase of 23 students in medicine being diminished by a loss of 8 college and 3 graduate students. Forty-five students are enrolled in the special courses for physicians and 67 in the college courses for teachers given afternoons and Saturday mornings.

The *University of Kansas* lost a few students in the summer, but gained 56 this fall, the gain in the grand total being one of 58, there being a decrease in the number of summer session students who returned for work this fall. There is a large gain in the attendance of male academic students, while the engineering schools have not increased in numbers. The most marked increase in attendance is found in the graduate school. In spite of the fact that two years of college are now required for admission to the medical school, the first-year class shows a healthy increase in attendance.

The gain of 71 students in the grand total attendance of the *University of Michigan* is to be laid at the door of its summer session, which showed an increase of 139 students, as against a loss of 5 in the fall enrollment, gains in male undergraduates, law and dentistry not quite offsetting losses in medicine, engineering, pharmacy and the graduate school. Mr. Arthur G. Hall, registrar, writes as follows:

> Including the graduate students registered in the summer session, but making due allowance for duplications, there were altogether 270 graduate students registered prior to November 1. The figures given for law are exclusive of 35 students and those for medicine of 37 students registered in the "combined course." The department of law has a larger number of students than ever before. As was foreseen, the raising of the requirements for admission to the department of medicine and surgery to two full years of the arts course, has resulted in a falling off in the size of the entering class. The combined arts-medical and arts-law courses continue to grow in favor, as does the course in forestry. The dental college is fully settled in its new building. In spite of the higher admission requirements which went into effect this year, this college shows a ten per-cent. increase in enrollment. The summer session of 1909 was more largely attended than the session of any previous year, the total registration being 1,225. This was a gain of 148 over the session of 1908, or an increase of fourteen per cent.

Mr. E. B. Pierce, registrar, has furnished the following report for the *University of Minnesota:*

> The only decrease in attendance that is of any importance is in the college of medicine and surgery and in the college of law. The decrease in the college of law is due to the increased entrance requirement. All students entering that department now are required to complete one full year of work in the college of arts, and in 1911 two full years in the college of arts will be re-

quired for admission. Last year the total registration in law was 614. This year it is 376. The increase of 131 in the freshman class of the college arts is undoubtedly directly related to this increase in the entrance requirements for admission to law.

In 1908–9 the registration in the college of medicine and surgery was considerably increased by the amalgamation of the Hamline University medical department with that of the University of Minnesota, reaching 253. This year the registration has fallen to 176, due partly to the graduation of a number of the transferred Hamline students, and partly to the fact that the number who would naturally enter the freshman class of the Hamline medical department direct from the high school would be required to complete two years of college work in arts before gaining admission to the freshman medical class here.

The college of engineering shows a decrease in registration of 75, probably due to the lengthening of the course from four to five years. There are 612 students enrolled in the school of agriculture at the present time. While this school is not doing work of college grade, it is, on the other hand, not in any sense a preparatory school, but offers a three-year technical course. The registration figures for the short courses in agriculture, such as the teachers' summer school, the summer forestry school, the farmers' short course and the dairy school, amounting last year to 485, can not be given at this time.

The registration at the *University of Missouri* shows a slight increase over last year, but the gain is due almost entirely to the summer session. The fact that the regular session fails to maintain the rate of increase of preceding sessions is due to a number of causes. Chief among these is the establishment of tuition fees in the schools of law, medicine, engineering and journalism and for non-residents in all departments. The registration in individual departments has also been affected by regulations adopted for the reduction of double registration which has been reduced one half, and will be still further reduced during next session. As noted, last year the registration in the school of medicine was affected by uncertainty regarding plans for removing the last two years of the course to St. Louis or Kansas City. It was finally decided to discontinue temporarily the work of these years. The decrease in the school of education is only an apparent one, being due to the fact that beginning with this session two years of college work are required for admission to this school. The college of agriculture continues to show the largest increase in registration.

The *University of Nebraska* shows a gain of 200 in the fall enrollment and of 54 in the summer session. There has been a large increase (193) in the male academic department, apparently at the expense of the scientific schools (— 107), but this is due to the fact that the "general scientific" students are now included under arts, whereas they were formerly registered in the industrial college. The college of arts and sciences will hereafter grant the degree of bachelor of science, as well as that of bachelor of arts. There is a loss in the number of undergraduate women, probably due to transfers to the teachers college. The number of entrance points has been increased from 28 to 30, the new regulation to become operative on September 1, 1910.

New York University has a loss of 63 in the summer and of 33 in the fall enrollment. The chief losses in the present term are found in the schools of law, education and engineering, which gains in medicine and male undergraduates were not quite able to overcome.

Owing to the large first item of double registration, it is difficult to draw accurate conclusions concerning the changes in attendance on the different faculties of *Northwestern University*. The school of divinity and the male college department seem to be the only faculties to have suffered a loss, entries being made for the first time under the engineering school and

the graduate school. The total fall enrollment shows a gain of 137 students, the summer session a loss of 13 students. The students entered under "other courses" are registered in the department of oratory.

Ohio State University has had an encouraging increase both in this fall's and in last summer's enrollment, the gain being one of 202 and 139 students, respectively. The only faculties to suffer a loss are those of engineering, forestry and pharmacy, which in the case of the two departments last mentioned is only slight. Miss Edith D. Cockins, registrar, reports as follows:

The shortage in the engineering college is in the freshman class: an enrollment of 262 as against 301 the same date last year. The enrollment in the pharmacy college is 2 less than it was a year ago. In the college of arts there is an increase of 90; in agriculture an increase of 75; in law an increase of 75; in education an increase of 18; in veterinary medicine an increase of 15.

Mr. Edward Robins, assistant secretary of the *University of Pennsylvania,* has submitted the following report:

A comparison with previous figures shows that this is the largest registration in the history of the University of Pennsylvania, a distinct gain in the college, graduate school, law school, school of dentistry and school of veterinary medicine being noticeable. There is some falling off in the medical registration, but this was to have been expected. The requirements for admission to this school have been increased, and for the academic year 1909–10 candidates for admission into the school of medicine must have successfully completed work equivalent to that prescribed for the freshman class in colleges recognized by our university—this to include a knowledge of physics, chemistry and general biology or zoology, and together with appropriate laboratory work in each of these subjects, as specified by the College Entrance Examination Board, and two foreign languages, one of which must be French or German. Next year, 1910–11, candidates must have successfully completed work equivalent to that prescribed for the freshman and sophomore classes. The slight falling off in the medical registration therefore is a healthful sign, rather than one of weakness.

Princeton University shows an increase of 84 students, although the present enrollment is smaller than that of 1903. The graduate school has increased by 43 students, while changes in the distribution of academic and scientific students render comparisons in those departments impossible.

Mr. O. L. Elliott, registrar, reports as follows for *Stanford University:*

There are no general changes worthy of note in regard to the descriptive matter which you have specified. Our enrollment was depressed last year by the student upheaval of the previous year. This we have recovered the present year. The university is making no effort to increase the total attendance. In many ways we are still marking time and are uncertain as to the direction of the future development of the university.

The most important event during the last year was the establishment of a medical department. Only the first year of the course is given during 1909–10. The class beginning this year will be carried through, the second year being added in 1910–11, and so on. The first year's class numbers 13.

The 42 students in the law school are exclusive of 29 college seniors taking first year law.

Syracuse University reports as follows:

The apparent loss in the college of liberal arts is largely due to the fact that one course heretofore included in that college has been taken out and is counted elsewhere. We think the fact that our entrance requirement is 75 per cent., as against 65 per cent. upon the part of many of the other colleges and upon the part of the requirement of the regents, has been militating somewhat against our attendance this year in the college of liberal arts. The loss in the college of medicine is due to the increased requirements—one year of college work. In 1910 two years of college work will be required for entrance.

The figures of the teachers college hardly give a fair impression of the work of that college. Three hundred and sixty-five students of the college of liberal arts are taking regular pedagogical work in the teachers college, but are not counted in the registration of that college. The college will hereafter be known as the Margaret Olivia Slocum Teachers College.

The courses in music and art show heavy gains, as does the registration under "other courses" (belles lettres, school of library, economy, etc.). The fall enrollment exhibits an increase of 54 students.

E. J. Mathews, secretary to the president, has submitted the following report for the *University of Texas:*

The total attendance is larger this session than ever before in the face of advanced entrance requirements in every department. The attendance on the law department is lower than heretofore on account of the going into effect this session of the requirement of five college courses. It is very probable that by another year the registration figures will be as large as ever. The attendance on the department of engineering is less than formerly, probably due to the fact that the only other school of engineering in the state has lowered its admission requirements.

The 47 students mentioned under "other courses" at *Tulane University* are taking work in domestic science.

Howard Winston, registrar, reports as follows for the *University of Virginia:*

The enrollment this fall slightly exceeds that of 1908. The increase has been in the college and engineering departments, notwithstanding the fact that two more units are required for entrance. Three years' residence are now required for graduation from the law school, instead of the two previously demanded, while a year of college work is now required for admission to the medical school, these changes causing a falling off in attendance on both faculties.

Western Reserve University shows a gain of 67 students over last year, an increase in undergraduate women, in the graduate school, the library school (other courses) and in dentistry more than offsetting slight losses in the undergraduate men, law, medicine and pharmacy. Leaving the graduate and library schools out of consideration, there is a gain of 35 new students over 1908.

The *University of Wisconsin* shows an increase in the fall total of 258 and in the summer session of 106. The students of commerce are for the first time listed separately, as are the students of home economics included under "other courses." There is a gain of 99 students of agriculture and of 85 undergraduate women. Medicine has experienced a gain of 18 and the graduate school one of 43 students. Mr. W. D. Hiestand, registrar, submitted the following comment:

Our total number of graduate students is 259. The 54 apportioned to professional schools includes graduate students taking work in engineering and agriculture. The number indicated as double registration are students taking work in two colleges; it is, therefore, impossible to eliminate this number and still do justice to the colleges concerned. The students represented in the school of music (108) are catalogued on a somewhat different basis from those of last year (216). In the reorganization of the school, the academic department has been discontinued and all candidates are now required to offer full college entrance requirements for admission, irrespective of their musical abilities. The figures will show a falling off in the college of engineering as compared with last year and also a slight decrease in the school of law.

Yale University exhibits a loss of 184 students in its fall enrollment, a considerable number of whom are law students. The academic department and medicine and music show smaller losses. The chief gains are in the graduate school and in forestry. To the scientific school registration should be added 170 graduate students included in the graduate school figures.

RUDOLF TOMBO, JR.
COLUMBIA UNIVERSITY

THE PHYSICAL LABORATORY OF THE NATIONAL ELECTRIC LAMP ASSOCIATION

A RESEARCH laboratory is now usually considered as a necessary adjunct to a large progressive, manufacturing organization. There are to-day many such research laboratories in operation in this country, employing men of scientific training and offering every facility for scientific investigation. The majority of these laboratories are engaged in chemical research, although in quite recent years the